

REMARKS

It is respectfully submitted that the rejection of claims 1-11 under 35 USC § 112, first and second paragraph, can be withdrawn in light of the above amendments and following comments. The Examiner's comments have been helpful in understanding the basis of this rejection and identifying what changes should be made.

The specification on pages 5 and 6 which points out that the polymer resulting from the plasma polymerization has residual polymerizable groups and it is those groups which participate in forming the reaction product with the radiation curable composition. The last paragraph on page 3 indicates any plasma polymerization process can be used in forming the polymer.

The specification does not describe the application of any type of plasma after the coating of plasma polymerization polymer with residual polymerizable groups has been formed. Example 1 describes such a formation of a substrate with a plasma polymer coating. Examples 2-4 describe applying a radiation curable ink to the coating without the application of additional plasma of any type. Since there are only two possibilities, application of additional plasma of some type and no application of additional plasma of any type, and the Examples illustrate no application of additional plasma of any type, the application does describe what is done as set forth in the amended claims.

The independent claims already state that radiation curable composition comprises at least one component which forms a reaction product with the residual unpolymerized polymerizable functional groups when radiation is applied. The

penultimate paragraph on specification page 6 states that any such component can be used.

It is respectfully submitted that the above amendments conform the claims to the foregoing, clarify any ambiguity, and find basis in the application so that no new matter is involved.

It is respectfully submitted that the rejections of claims 12, 16 and 17 under 35 USC § 102, of claims 1, 5-7, 9-12, 16 and 17 under 35 USC § 103, and of 2-4 and 13-15 under 35 USC § 103 over Daimon should be withdrawn.

Daimon teaches a fiber substrate which has been subjected to a surface treatment, and then a curable composition is applied to that surface and crosslinked and cured. The purpose of the surface treatment is to change the surface tension of the surface, thereby allowed better wetting of that surface and resulting in better adhesion by the subsequently applied coating. While the surface treatment is preferably corona discharge, other surface treatments such as plasma polymerization can be used. The plasma polymer resulting from the plasma polymerization thus exists as a new surface covering the prior exterior surface of the fiber substrate. Daimon teaches this new surface will have a different surface tension compared to the fiber surface.

This reference does not, however, teach that in the event that plasma polymerization is employed, the resulting plasma polymer coating will contain any residual unpolymerized polymerizable functional groups. Indeed, the PTO previously conceded that "Daimon et al.'s process may not...provide [residual polymerizable groups]" at page 4, lines 1-3. The reference does not suggest any reason why such

groups would be desired. To the extent that Daimon contemplates plasma polymerization, it is to create a new surface and not to leave residual unpolymerized groups present. The last two lines of application page 5 point out that in this invention, the prior art plasma polymerization process is modified in the invention so as to leave such residual unpolymerized groups. Daimon does not teach or suggest any reason to modify the art plasma polymerization process.

Daimon teaches a curable composition is applied to the treated surface, and the curable composition itself is cross-linked and cured. Forming a new surface over the substrate surface by forming a polymer (by plasma polymerization or otherwise) may mean that the new surface presented for further coating has a different surface tension, but it does not mean there were residual polymerizable groups present on the plasma polymer. Describing applying a curable coating to a surface (which is all that Daimon does disclose) does not suggest forming a reaction product with that surface. Saying a curable coating composition containing an unsaturated entity and reactive diluent becomes cross-linked does not suggest or imply the cross-linking is with some third entity. The reference does not teach or suggest forming any type of reaction product between the curable composition and residual unpolymerized polymerizable functional groups of a plasma polymer.

That there may be enhanced adhesion does not "imply" linking to the surface as proposed in the last Office Action, especially since the degree of adhesion is influenced by the wettability of one material by another, and changing surface tension changes wettability, as a prior Office Action itself pointed out. Since there is no factual basis in the record for the proposed "linking", it must be based on as assertion of

inherency. Such an assertion requires certainty, and neither a possibility or even a probability will suffice. No attempt has been made to establish the required certainty.

To establish inherency, the extrinsic evidence “must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient”. *In re Robertson*, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted, emphasis added). The various observations set forth in the Office Action (e.g., advanced adhesion) at the very best raise a probability or possibility, but do not satisfy the requirement of certainty need to establish inherency by the Office. Unless the PTO satisfies its burden to show inherency, no *prima facie* rejection has been made.

In view of the fundamental difference between the claimed invention and the reference, it is respectfully submitted that the rejections are untenable and should be withdrawn.

The rejection of claims 1, 5-7, 9, 11-12, 16 and 17 under 35 USC § 102 and of claims 2-4, 10 and 13-15 under 35 USC § 103 over Vargo. Both rejections are respectfully traversed.

Vargo teaches an adhesive-oxyhalopolymer composite in which hydrogen or oxygen groups bond the polymer to the adhesive. The “polymer” can possibly be in the form of a non-halogenated substrate on which a polymerized fluorocarbon coating has been applied (col. 7) and has thereafter been treated to substitute H or O or oxygen

containing groups for some of the halogen moieties. These are not residual unpolymerized polymerizable functional groups of a plasma polymer. Vargo also teaches that the oxygen containing groups and H can be used to bond the polymer to an adhesive, which can possibly be (but does not have to be) a radiation curable material. While the adhesive may be radiation curable, there is no teaching or suggestion that it forms a reaction product with residual unpolymerized polymerizable functional groups when radiation is applied, as in the claimed invention. In Vargo, the halopolymer must be bonded to the radiation curable adhesive before radiation is applied because once radiation is applied, the adhesive would be cured (set) and could not perform its intended function of bonding to something else. Vargo uses the H or O or oxygen containing groups to bond the polymer to the adhesive without eliminating the adhesive quality of the adhesive so that the polymer can be bonded to the something else via the adhesive.

The Office previously suggested 5 that "plasma treatment of nonhalogen substrates" forms plasma polymers with residual groups. But plasma treatment and plasma polymerization are different, as evidenced by Daimon's listing of them as separate surface treatments. Moreover, the claims as now amended exclude plasma treatment of the plasma polymerization polymer.

Vargo is fundamentally different from the present invention. The reference does not teach the claimed invention nor suggest that is there any reason to make the drastic changes necessary to convert what Vargo does teach into the claimed invention.

Once again, the Office has not established inherency, which is the basis of the explanation of these rejections in the Office Action.

Withdrawal of these rejections in light of the foregoing considerations and amendments is respectfully requested.

Claims 1-4, and 13-15 were rejected under 35 USC § 103 over Daimon in view of McGee, and claims 8 and 18-20 rejected under 35 USC § 103 over Daimon in view of McGee and either Goodwin, Willis or Kamel.

The applicability of Daimon has been discussed above. None of the McGee, Goodwin, Willis or Kamel references have been advanced to cure any of the basic deficiencies in Daimon, nor do they do so. Accordingly, these rejections are not tenable and should be withdrawn.

Likewise, the rejection of claims 8 and 18-20 under 35 USC § 103 over Vargo in view of Goodwin should be withdrawn since Goodwin has not asserted cure any of the basic deficiencies in Vargo discussed above, nor does it do so.

Claims 1 and 12 have been rejected under 35 USC § 102 over Timmons. While this reference may teach films with functional groups as asserted, it does not teach or suggest applying a radiation curable composition (containing a component which forms a reaction product to the functional group-containing plasma polymer) and radiation curing the radiation curable composition without applying additional plasma to the plasma polymer coated-substrate. This rejection should therefore be withdrawn.

In view of the discussion above, it is not considered necessary to discuss other assertions in the Office Action, and it should not be assumed that applicant agrees with any assertion not discussed.

In view of the above amendments and remarks, applicant believes the pending application is in condition for allowance.

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